In the Claims

Please amend claims 1, 36, and 38; and add claims 62-68 as follows:

1. (**Currently Amended**) An implant delivery system comprising:

a catheter including an elongated member having an implant mounting location;

an expandable implant mounted on the elongated member at the implant mounting location, the implant being expandable from a compressed orientation to an expanded orientation, the implant including first and second ends;

a sheath mounted on the elongated member, the sheath being positionable in a transport position in which the sheath covers the implant mounted at the implant mounting location, the sheath also being positionable in a deploy position in which the implant is exposed;

the implant including a first interlock structure and the elongated member including a second interlock structure, the first and second interlock structures interlocking to constrain axial movement of the implant relative to the elongated member when the implant is at least partially within the sheath, and the first and second interlock structures not constraining radial expansion of the implant;

one of the first and second interlock structures including a male interlock structure and the other of the first and second interlock structures including a female interlock structure adapted to receive the male interlock structure when the implant is in the compressed orientation;

the implant including a cell defining region; and

at least a portion <u>of each</u> of the first <u>and second</u> interlock <u>structures</u> ~~structure~~ being positioned a distance from the cell defining region of the implant, the distance being at most 5 millimeters from the cell defining region.

2. (Original) The implant delivery system of claim 1, wherein the implant comprises a stent.

3. (Cancelled)

4. (Previously Presented) The implant delivery system of claim 1, wherein the elongated member includes a radiopaque marker positioned adjacent to the implant mounting location, and wherein the marker defines the second interlock structure.

5. (Original) The implant delivery system of claim 1, wherein the first end of the implant is a proximal end of the implant.

6. (Previously Presented) The implant delivery system of claim 1, wherein the implant includes a plurality of separate first interlock structures, wherein the elongated member includes a plurality of second interlock structures for interlocking with the first interlock structures.

7. (Withdrawn) The implant delivery system of claim 1, wherein the first interlock structure is the male interlock structure and the second interlock structure is the female interlock structure.

8. (Withdrawn) The implant delivery system of claim 7, wherein the male interlock structure includes an enlargement positioned at the first end of the implant.

9. (Withdrawn) The implant delivery system of claim 8, wherein the implant includes a plurality of enlargements at the first end of the implant.

10. (Withdrawn) The implant delivery system of claim 8, wherein the male interlock structure includes a circumferential projection positioned at the first end of the implant.

11. (Withdrawn) The implant delivery system of claim 10, wherein the implant includes a plurality of the circumferential projections at the first end of the implant.

12. (Original) The implant delivery system of claim 1, wherein the first interlock structure is the female interlock structure and the second interlock structure is the male interlock structure.

13. (Previously Presented) The implant delivery system of claim 12, wherein the implant includes struts, and the female interlock structure includes a non-expandable post opening defined through at least one of the struts.

14. (Original) The implant delivery system of claim 13, wherein the implant includes a plurality of the post openings.

15. (Original) The implant delivery system of claim 13, wherein the implant includes struts, and the female interlock structure includes an opening between the struts.

16. (Previously Presented) The implant delivery system of claim 1, wherein the distance is at most 2 millimeters from the cell defining region of the implant.

17. (Previously Presented) The implant delivery system of claim 1, wherein the distance is at most 1 millimeter from the cell defining region of the implant.

18. (Original) The implant delivery system of claim 1, wherein the elongated member extends completely through the implant.

19. (Original) The implant delivery system of claim 1, wherein the cell defining region of the implant includes a boundary defined by an inner diameter and an outer diameter of the implant, and wherein the first interlock structure stays generally within the boundary after the implant has been deployed.

20. (Original) The implant delivery system of claim 1, wherein the first interlock structure is not radially outwardly biased relative to the cell defining region of the implant.

21. (Previously Presented) An implant delivery system comprising:

a catheter including an elongated member having an implant mounting location;

an expandable implant mounted on the elongated member at the implant mounting location, the implant being expandable from a compressed orientation to an expanded orientation, the implant including first and second ends;

a sheath mounted on the elongated member, the sheath being positionable in a transport position in which the sheath covers the implant mounted at the implant mounting location, the sheath also being positionable in a deploy position in which the implant is exposed;

the implant including a cell defining region, the implant also including a plurality of struts at least some of which have terminal ends defining the first end of the implant, the implant also including at least two enlargements positioned at the terminal ends of the struts, the enlargements being located a distance from the cell defining region of the implant, the distance being at most 5 millimeters from the cell defining region; and

the elongated member including interlock structures that interlock with the enlargements to constrain axial movement of the implant relative to the elongated member when the implant is at least partially within the sheath.

22. (Previously Presented) The implant delivery system of claim 21, wherein the elongated member includes a radiopaque marker positioned adjacent to the implant mounting location, and wherein the marker defines the receptacles.

23. (Original) The implant delivery system of claim 21, wherein the first end of the implant is a proximal end of the implant.

24. (Previously Presented) The implant delivery system of claim 21, wherein the distance is at most 2 millimeters from the cell defining region of the implant.

25. (Previously Presented) The implant delivery system of claim 21, wherein the distance is at most 1 millimeter from the cell defining region of the implant.

26. (Original) The implant delivery system of claim 21, wherein the elongated member extends completely through the implant.

27. (Original) The implant delivery system of claim 21, wherein the cell defining region of the implant includes a boundary defined by an inner diameter and an outer diameter of the implant, and wherein the enlargements stay generally within the boundary after the implant has been deployed.

28. (Original) The implant delivery system of claim 21, wherein the enlargements are not radially outwardly biased relative to the cell defining region of the implant.

29. (Previously Presented) An implant delivery system comprising:

a catheter including an elongated member having an implant mounting location;

an expandable implant mounted on the elongated member at the implant mounting location, the implant being expandable from a compressed orientation to an expanded orientation, the implant including first and second ends;

a sheath mounted on the elongated member, the sheath being positionable in a transport position in which the sheath covers the implant mounted at the implant mounting location, the sheath also being positionable in a deploy position in which the implant is exposed;

the implant including a cell defining region having cells that enlarge when the implant is expanded, the implant also including first and second ends, the implant further including at least two female interlock structures positioned a distance from both the first end of the implant and the cell defining region of the implant, the distance being at most 5 millimeters, the female interlock structures being configured to not enlarge when the implant is expanded; and

the elongated member including male interlock structures that are received within the female interlock structures to constrain axial movement of the implant relative to the elongated member when the implant is at least partially within the sheath, the male and female interlock structures not constraining radial expansion of the implant.

30. (Previously Presented) The implant delivery system of claim 29, wherein the elongated member includes a radiopaque marker positioned adjacent to the implant mounting location, and wherein the marker includes the male interlock structures.

31. (Original) The implant delivery system of claim 29, wherein the first end of the implant is a proximal end of the implant.

32. (Previously Presented) The implant delivery system of claim 29, wherein the distance is at most 2 millimeters from the cell defining region of the implant.

33. (Previously Presented) The implant delivery system of claim 29, wherein the distance is at most 1 millimeter from the cell defining region of the implant.

34. (Original) The implant delivery system of claim 29, wherein the elongated member extends completely through the implant.

35. (Cancelled)

36. **(Currently Amended)** An implant delivery system comprising:

a catheter including an elongated member having an implant mounting location;

an expandable implant mounted on the elongated member at the implant mounting location, the implant being expandable from a compressed orientation to an expanded orientation, the implant including first and second ends;

a sheath mounted on the elongated member, the sheath being positionable in a transport position in which the sheath covers the implant mounted at the implant mounting location, the sheath also being positionable in a deploy position in which the implant is exposed;

the implant including a first interlock structure and the elongated member including a second interlock structure, the first interlock structure being separate from a cell defining region of the implant, the first and second interlock structures interlocking

to constrain axial movement of the implant relative to the elongated member when the implant is at least partially within the sheath, and the first and second interlock structures not constraining radial expansion of the implant;

one of the first and second interlock structures including a male interlock structure and the other of the first and second interlock structures including a female interlock structure adapted to receive the male interlock structure when the implant is in the compressed orientation; and

at least a portion of each of the first and second interlock structures ~~structure~~ being positioned a distance of at most 5 millimeters from the cell defining region of the implant, and the elongated member extending through the implant at the implant mounting location.

37. (Previously Presented) The implant delivery system of claim 36, wherein at least a portion of the first interlock structure is positioned a distance of at most 2 millimeters from the cell defining region of the implant.

38. (**Currently Amended**) An implant delivery system comprising:

a catheter including an elongated member having an implant mounting location;

an expandable implant mounted on the elongated member at the implant mounting location, the implant being expandable from a compressed orientation to an expanded orientation, the implant including first and second ends;

a sheath mounted on the elongated member, the sheath being positionable in a transport position in which the sheath covers the implant mounted at the implant mounting location, the sheath also being positionable in a deploy position in which the implant is exposed;

the implant including a first interlock structure and the elongated member including a second interlock structure, the first and second interlock structures interlocking to constrain axial movement of the implant relative to the elongated member when the implant is at least partially within the sheath, and the first and second interlock structures not constraining radial expansion of the implant;

one of the first and second interlock structures including a male interlock structure and the other of the first and second interlock structures including a female interlock structure adapted to receive the male interlock structure when the implant is in the compressed orientation;

the implant including a cell defining region that includes a boundary defined by an inner diameter and an outer diameter of the implant, the first interlock structure being separate from the cell defining region and configured to stay generally within the boundary after the implant has been deployed; and

at least a portion of each of the first and second interlock structures ~~structure~~ being positioned a distance of at most 5 millimeters from the cell defining region of the implant.

39. (Previously Presented) The implant delivery system of claim 38, wherein at least a portion of the first interlock structure is positioned a distance of at most 2 millimeters from the cell defining region of the implant.

40. (Cancelled)

41. (Cancelled)

42. (Cancelled)

43. (Cancelled)

44. (Cancelled)

45. (Previously Presented) A stent delivery system comprising:

a catheter including an elongated body having a stent mounting location;

an expandable stent mounted on the elongated body at the stent mounting location, the stent being expandable from an undeployed orientation to a deployed orientation, the stent including first and second ends and a cell defining region located

between the first and second ends, the cell defining region defining cells each having a cell length, the stent also including at least one or more first interlock structures positioned a distance from the cell defining region of the implant, the distance being at most 5 millimeters from the cell defining region; and

the elongated body including at least one or more second interlock structures that interlock with the one or more first interlock structures to constrain axial movement of the stent relative to the elongated body.

46. (Previously Presented) The stent delivery system of claim 45, wherein the expandable stent includes at least two first interlock structures, and wherein the elongated body includes at least two second interlock structures that interlock with the at least two first interlock structures of the expandable stent.

47. (Previously Presented) The stent delivery system of claim 45, wherein the one or more first interlock structures each include an enlargement.

48. (Previously Presented) The stent delivery system of claim 47, wherein the enlargement of the one or more first interlock structures defines an opening, the opening being configured for receipt of one of the one or more second interlock structures of the elongated body.

49. (Previously Presented) The stent delivery system of claim 48, wherein the opening of the one or more first interlock structures is configured to not enlarge when the stent is expanded.

50. (Previously Presented) A stent delivery system comprising:

a catheter including an elongated body having a stent mounting location;

an expandable stent mounted on the elongated body at the stent mounting location, the stent being expandable from an undeployed orientation to a deployed orientation, the stent including first and second ends, the stent also including one or more

first interlock structures each having a rounded enlargement, the rounded enlargement of the one or more first interlock structures defining an opening; and

the elongated body including one or more second interlock structures configured for receipt within the openings of the one or more first interlock structures to constrain axial movement of the stent relative to the elongated body.

51. (Previously Presented) The stent delivery system of claim 50, wherein the expandable stent includes at least two first interlock structures each having a rounded enlargement, and wherein the elongated body includes at least two second interlock structures that receive the at least two first interlock structures.

52. (Cancelled)

53. (Previously Presented) An implant delivery system comprising:

a catheter including an elongated member having an implant mounting location;

an expandable implant mounted on the elongated member at the implant mounting location, the implant being expandable from a compressed orientation to an expanded orientation, the implant including first and second ends;

a sheath mounted on the elongated member, the sheath being positionable in a transport position in which the sheath covers the implant mounted at the implant mounting location, the sheath also being positionable in a deploy position in which the implant is exposed;

the implant including a cell defining region, the implant also including a plurality of struts at least some of which have terminal ends defining the first end of the implant, the implant also including at least two enlargements defining openings and positioned at the terminal ends of the struts, the enlargements being located a distance from the cell defining region of the implant, the distance being at most 5 millimeters from the cell defining region; and

the elongated member including interlock structures configured for receipt within the openings of the enlargements to constrain axial movement of the implant relative to the elongated member when the implant is at least partially within the sheath.

54. (Previously Presented) An implant delivery system comprising:

a catheter including an elongated member having an implant mounting location;

an expandable implant mounted on the elongated member at the implant mounting location, the implant being expandable from a compressed orientation to an expanded orientation, the implant including first and second ends;

the implant including a cell defining region, the implant also including a plurality of struts at least some of which have terminal ends defining the first end of the implant, the implant also including at least two enlargements defining openings and positioned at the terminal ends of the struts; and

the elongated member including interlock structures configured for receipt within the openings of the enlargements to constrain axial movement of the implant relative to the elongated member.

55. (Previously Presented) A stent delivery system comprising:

a catheter including an elongated body having a stent mounting location;

an expandable stent mounted on the elongated body at the stent mounting location, the stent being expandable from an undeployed orientation to a deployed orientation, the stent including first and second ends, the stent also including one or more first interlock structures each having a rounded enlargement, the rounded enlargement of the one or more first interlock structures defining an opening; and

the elongated body including one or more second interlock structures that interlock with the openings of the one or more first interlock structures to constrain axial movement of the stent relative to the elongated body.

56. (Previously Presented) The stent delivery system of claim 55, wherein the expandable stent includes at least two first interlock structures each having a rounded enlargement, and wherein the elongated body includes at least two second interlock structures that interlock with the at least two first interlock structures.

57. (Previously Presented) A stent delivery system comprising:

a catheter including an elongated body having a stent mounting location;

an expandable stent mounted on the elongated body at the stent mounting location, the stent being expandable from an undeployed orientation to a deployed orientation, the stent including first and second ends and a cell defining region located between the first and second ends, the cell defining region defining cells each having a cell length, the stent also including at least one or more first interlock structures positioned a distance from the cell defining region of the implant, the distance being at most equivalent to the cell length of the cells; and

the elongated body including at least one or more second interlock structures that interlock with the one or more first interlock structures to constrain axial movement of the stent relative to the elongated body.

58. (Previously Presented) The stent delivery system of claim 57, wherein the stent further includes a plurality of struts at least some of which have free ends, the one or more first interlock structures being located at the free ends of the struts.

59. (Previously Presented) The stent delivery system of claim 58, wherein the one or more first interlock structures include enlargements located at the free ends of the struts.

60. (Previously Presented) The stent delivery system of claim 57, wherein the one or more first interlock structures include enlargements configured to interlock with the second interlock structures of the elongated body.

61. (Previously Presented) The stent delivery system of claim 57, wherein the one or more first interlock structures define openings that interlock with the second interlock structures of the elongated body.

62. (**New**) An implant delivery system comprising:

a catheter including an elongated member having an implant mounting location;

an expandable implant mounted on the elongated member at the implant mounting location, the implant being expandable from a compressed orientation to an expanded orientation, the implant including first and second ends;

a sheath mounted on the elongated member, the sheath being positionable in a transport position in which the sheath covers the implant mounted at the implant mounting location, the sheath also being positionable in a deploy position in which the implant is exposed;

the implant including a female interlock structure and the elongated member including a male interlock structure, the female interlock structure being adapted to receive the male interlock structure when the implant is in the compressed orientation, the female and male interlock structures interlocking to constrain axial movement of the implant relative to the elongated member when the implant is at least partially within the sheath, and the female and male interlock structures not constraining radial expansion of the implant;

the implant including a cell defining region; and

at least a portion of the female interlock structure being positioned a distance from the cell defining region of the implant, the distance being at most 5 millimeters from the cell defining region.

63. **(New)** The implant delivery system of claim 62, wherein the implant includes struts, and the female interlock structure includes a non-expandable post opening defined through at least one of the struts.

64. **(New)** The implant delivery system of claim 63, wherein the implant includes a plurality of the post openings.

65. **(New)** The implant delivery system of claim 63, wherein the implant includes struts, and the female interlock structure includes an opening between the struts.

66. **(New)** An implant delivery system comprising:

a catheter including an elongated member having an implant mounting location;

an expandable implant mounted on the elongated member at the implant mounting location such that the elongated member extends completely through the implant, the implant being expandable from a compressed orientation to an expanded orientation, the implant including first and second ends;

a sheath mounted on the elongated member, the sheath being positionable in a transport position in which the sheath covers the implant mounted at the implant mounting location, the sheath also being positionable in a deploy position in which the implant is exposed;

the implant including a first interlock structure and the elongated member including a second interlock structure, the first and second interlock structures interlocking to constrain axial movement of the implant relative to the elongated member when the implant is at least partially within the sheath, and the first and second interlock structures not constraining radial expansion of the implant;

one of the first and second interlock structures including a male interlock structure and the other of the first and second interlock structures including a female interlock structure adapted to receive the male interlock structure when the implant is in the compressed orientation;

the implant including a cell defining region; and

at least a portion of the first interlock structure being positioned a distance from the cell defining region of the implant, the distance being at most 5 millimeters from the cell defining region.

67. (**New**) An implant delivery system comprising:

a catheter including an elongated member having an implant mounting location;

an expandable implant mounted on the elongated member at the implant mounting location, the implant being expandable from a compressed orientation to an expanded orientation, the implant including first and second ends;

a sheath mounted on the elongated member, the sheath being positionable in a transport position in which the sheath covers the implant mounted at the implant mounting location, the sheath also being positionable in a deploy position in which the implant is exposed;

the implant including a first interlock structure and the elongated member including a second interlock structure, the first and second interlock structures interlocking to constrain axial movement of the implant relative to the elongated member when the implant is at least partially within the sheath, and the first and second interlock structures not constraining radial expansion of the implant;

one of the first and second interlock structures including a male interlock structure and the other of the first and second interlock structures including a female interlock structure adapted to receive the male interlock structure when the implant is in the compressed orientation;

the implant including a cell defining region, the cell defining region having a boundary defined by an inner diameter and an outer diameter of the implant, wherein the first interlock structure stays generally within the boundary after the implant has been deployed; and

at least a portion of the first interlock structure being positioned a distance from the cell defining region of the implant, the distance being at most 5 millimeters from the cell defining region.

68. **(New)** An implant delivery system comprising:

a catheter including an elongated member having an implant mounting location;

an expandable implant mounted on the elongated member at the implant mounting location, the implant being expandable from a compressed orientation to an expanded orientation, the implant including first and second ends;

a sheath mounted on the elongated member, the sheath being positionable in a transport position in which the sheath covers the implant mounted at the implant mounting location, the sheath also being positionable in a deploy position in which the implant is exposed;

the implant including a first interlock structure and the elongated member including a second interlock structure, the first and second interlock structures interlocking to constrain axial movement of the implant relative to the elongated member when the implant is at least partially within the sheath, and the first and second interlock structures not constraining radial expansion of the implant;

one of the first and second interlock structures including a male interlock structure and the other of the first and second interlock structures including a female interlock structure adapted to receive the male interlock structure when the implant is in the compressed orientation;

the implant including a cell defining region; and

at least a portion of the first interlock structure being positioned a distance from the cell defining region of the implant, the distance being at most 5 millimeters from the cell defining region;

wherein the first interlock structure is not radially outwardly biased relative to the cell defining region of the implant.